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LEASING SYSTEM AS APPLIED TO METAL MINING

BY

W. O. VANDERBURG

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LEASING SYSTEM AS APPLIED TO METAL MINING[1]

By W. O. Vanderburg[2]

INTRODUCTION

The leasing or tribute system has been an important factor in the development of our metal-mining industry, particularly in the gold and silver mines of the Western States. It has received its widest application in the early history of many camps and in the last stages of many mines. The system is especially adapted to mining where the ores occur in narrow veins or are erratically distributed in small bunches or pockets so that selective mining, hand sorting, screening, or hand cobbing is required to produce shipping or milling-grade ore. The leasing system is also applicable to the development of prospects where the owners are unable or unwilling to assume the risks of searching for ore.

The virtue of the system lies in the opportunity it affords miners with little capital to get started; at the same time, it gives owners an opportunity to have their property developed at small cost.

In the following pages leasing is defined; a brief history of the system is given; its advantages and disadvantages discussed; and as an aid in drawing up a lease the terms ordinarily included are set forth. In regard to the terms of a lease the statements should be taken as illustrative rather than applying exactly to average operating conditions. In the final analysis, just how the details of the leasing system can be applied to a property is a problem which must be worked out in each case.

DEFINITION OF LEASING

The term "lease" as ordinarily used in metal mining is a written or verbal contract for the exclusive possession and use of real property with specified restrictions, for a definite time, and for a stated consideration called rent, royalty, or tribute, payable at fixed times with money, in part of the product, or an agreed percentage of the proceeds derived from the sale of the mineral. The last-mentioned method of payment is the one commonly employed in the United States. The party taking the lease is variously called a grantee, lessee, tributor, adventurer, or chlorider.

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According to Lindley[3] mineral in place is land and an estate in such mineral may exist as an entity entirely separate from the overlying surface. Removal of minerals from the land is an act which constitutes permanent destruction of real estate. Unlike a business lease the relation of landlord and tenant in a mining lease does not contemplate destruction of the estate, and such destruction cannot be called use. Therefore, while the contract is in name a lease it amounts to a sale and the so-called royalty is purchase money for real estate.

The California courts have held that a contract giving the right to work a mine for a certain time (the gross profit to be divided between the parties) is not a lease; that such contract does not create the relation of landlord and tenant but fixes a rule of compensation for services rendered, and that in all its essentials it is a contract of labor to be performed and paid for by a share of the profits.[4]

According to this interpretation leasing may be defined as a pro-rata method of paying miners' wages. It differs from the contract system of paying wages used at some mines, by making the miner a sharer in the risk as well as in the profit.

Although it may be difficult to determine the correct legal name for the contract employed, this is less important from a practical viewpoint than ascertaining from the contract the respective rights of the contracting parties.

In some States a verbal lease on mining property is as binding as a written one, which is contrary to the general law that any transfer in the interest of land shall be void unless in writing. However, it is best for the protection of both parties that a mining lease be in writing and properly recorded.

Lessees are not always individuals but may consist of a number of men associated as a company for the specific purpose of leasing.

Leases are not confined to mines proper and prospects but may also include mine dumps, mill tailings, or mills, which contain recoverable minerals.

BOND AND LEASE

The term "bond and lease" as applied to mining is commonly used to cover a contract whereby the owner of the property agrees to sell it at a stated price and deliver a valid deed for it before the lease expires. A bond and lease provides for the possession and working of the property by the lessee, usually with the right to appropriate the mineral, with payment of stipulated

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3 Lindley, Curtis H., Lindley on Mines: 3d ed., vol. 3, 1914, pp. 2135-2136.
4 Mining and Scientific Press, vol. 89, 1904, p. 3.

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royalty on the ore extracted. It usually gives the lessee ample time in which to determine the merits of the property, and in the event of disappointment in its worth, he may terminate the contract. Since the value of mineral land with little or no ore in sight is extremely difficult to determine, a bond and lease on a property furnishes the lessee an incentive to do exploration and development work to demonstrate the value of the property before purchase.

HISTORICAL DEVELOPMENT OF THE LEASING SYSTEM

The evolution of the leasing system is historically interesting, since it has played a prominent part in the development of mining from remote times.

In ancient Greece the mines were considered the property of the state and were worked by lessees who paid tribute to the state either in the form of initial purchase or annual rent. This conception of mineral-land ownership was inherited from older civilizations.

Under Roman law, likewise, the mines obtained by conquest belonged to the state, which leased them to operators or worked them directly with slave labor.

Before the 13th century the miner or landlord had few rights to minerals, but with the rise of individualism about this time a number of charters appeared in Europe and England which confirmed to mining communities certain privileges but all reserved the regalian right whereby some minerals, particularly gold and silver, could be mined only on payment of royalty to the crown.

In England the mining communities of Cornwall and Devon were in the 13th century chartered into corporations called the "Stannaries", with broad powers but with the reservation to the crown of some sort of royalty. Eventually the miners and landlords obtained greater rights at the expense of the crown, and gradually the leasing system under private control came into existence.

The basic features of the leasing system in the United States probably were derived from England. The policy of leasing mineral lands in the United States by the Federal Government was inaugurated under Act of Congress March 3, 1807, wherein lead-mineral lands in the Indiana territory (Louisiana Purchase) were removed from sale, with the provision that they should be leased on an annual rental. The leases were under the supervision of the War Department. Royalty of one eighth to one tenth payable in lead or cash was demanded. The act provoked opposition, so that President Polk, in his first message to Congress, December 1845, recommended its repeal. This first attempt at leasing mineral lands by the Federal Government was abolished in 1846.

Although the leasing of mineral lands by the Government proved unsatisfactory in the early days the system, under corporate or individual control, gave a tremendous impetus to metal mining in the West. The leasing system was introduced into the mining camps of the West in 1859 in the Gregory district, Gilpin County, Colo. It spread rapidly to other Western States, and attained its greatest development in Colorado and Nevada.

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Among the districts where leasing has been a prominent feature in the operation of mines may be mentioned Cripple Creek, Aspen, Leadville, in Colorado; and Eureka, Tonopah, Goldfield, in Nevada. Numerous other mining camps could be cited where leasing has been employed at some time in their history, but the above will indicate that the system has been an important link in the chain which forms the stage-by-stage establishment of commercial mining risks, and also a noteworthy feature in working old mines where individual miners take chances of making money under conditions which do not appeal to companies.

ADVANTAGES AND DISADVANTAGES OF LEASING SYSTEM

The leasing system is particularly applicable in working old mines where the ore deposits are small and occur erratically and the finding of ore is the principal difficulty; or where the ore occurs in narrow veins, or bunches, which must be mined carefully and concentrated by hand to produce a shipping or milling grade product. In these cases the leasing system offers advantages compared to company operations on a days-pay basis.

A lessee has a sense of personal possession in part of the mine, and his primary aim is to make his lease as productive as possible. This sense of ownership provides a strong mental stimulus and brings forth intensified effort, since the lessee realizes that his success depends on his own skill and labor. By financial participation in the results of personal effort the lessee is also willing to take financial risks that the company may not be willing to advise, in the hope of making a strike, and by so doing he is occasionally rewarded with success.

The lessee generally works with a minimum of capital and consequently divests his working costs of every unessential item. He is primarily interested in profits with the least possible expense, and in this he is generally more successful than some companies which install costly plant equipment before enough ore has been found to justify the expense.

An important feature of the leasing system from the viewpoint of community prosperity is due to the fact that the lessee is frequently "grubstaked" by local residents, and any success attained leads the way to further effort.

Formerly it was considered at least a tacit admission that the end of a mine was in sight when it was thrown open to lessees. In recent years, however, some large mining companies have employed leasing as an adjunct to their regular operations. As an example, the El Tigre mine in Sonora, Mexico, producing gold and silver, was forced to make drastic reductions in wages and personnel in 1931, due to falling silver prices. Continued operation was made possible by resorting to the leasing system.[2]

Where leasing is conducted under the general supervision of the management and where care is exercised in the selection of well-qualified men the system

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2 Wasley, W. A., The Mexican Gambusino in El Tigre: Min. and Met. April 1933, p. 187.

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works out more satisfactorily than the old method when the lessees were left to their own devices. In the latter event only the best ore was gouged out, the workings left in poor shape for future operations, and any low-grade ore left behind could be mined only at considerable expense.

In many mines there is a time when at least part of the territory can be worked to better advantage by lessees than by any other method. Two two principal reasons are: First, the lack of efficiency and the expense of supervision for small operations distant from the larger stopes; and second the close attention required in hunting and mining small bunches or stringers of ore frequently overlooked or left behind intentionally in the rapid mining of large ore bodies.

An advantage of the leasing system from the property owner's viewpoint is that the lessee is responsible to the owner for damage to the mine, while under the days-pay system the owner is responsible to his employees. Also, the mine owner is not liable for liens when his property is worked by lessees.

The leasing system has been condemned because the contention is made that development work is apt to be done grudgingly and with little attention to subsequent utility. To this objection it may be stated that if adequate supervision is maintained over the lessees' work there is little reason why it will not come up to company standard.

The argument is also made that the lessee can afford to mine only high-grade ore, leaving the lower-grade material that by itself cannot be mined at a profit. This objection can be remedied by proper adjustment of royalty payments on the lower-grade ores.

TERMS OF A LEASE

There is no standard form of a lease suitable for all mines. The terms of a lease are varied to suit the conditions at each mine or the ideas of the owner and lessee. The elements of a lease may be summarized as follows:

1 - Date; names of contracting parties.
2 - Duration of lease; date of beginning, date of expiration, and whether or not subject to renewal.
3 - Description of lease; location and name of property; description of leased ground by definite boundaries.
4 - Royalty; amount of royalties and how calculated; when and how paid.
5 - Manner of working lease.
a - Minimum number of working shifts required per month by lessor.
b - What constitutes abandonment and forfeiture of lease.
c - Ownership of plant and improvements made by lessee when lease is terminated.
d - Safety of premises.
e - Disposal of waste.
f - Preservation of adjacent parts of mine, keeping levels clear, timbering and repairs, stoping near shaft.

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g - Minimum dimensions of underground workings, namely, shafts, winzes and raises, drifts and crosscuts.

h - Underhand stoping, whether or not permitted.

i - Work subject to inspection and direction of company agent.

j - Where ore is to be milled or smelted.

k - Bills incurred by lessee to be settled promptly and vouchers to be shown lessor on demand.

l - Subleasing, whether or not permitted.

m - Ownership of dumps when lease is surrendered.

n - Weighing and sampling ore.

o - Liability for damages or indebtedness.

p - Charges for compressed air, hoisting, transportation, blacksmithing, or other equipment and services furnished by lessor.

The principal points of difference in lease contracts are duration of lease, size of leased ground, and royalties.

The duration of the lease is nearly always specified, and it may range from 6 months to several years. Leases covering precious metal mines and prospects usually are given for 1 year, sometimes with the privilege of renewal for another year. Occasionally a lease may be of indefinite duration, but the lessee's operations are confined to a restricted block of ground.

Any equitable and practical leasing system must recognize that the discovery of ore involves an expenditure of time and labor so that the lessee must be adequately protected in his contract after a discovery is made. There is rarely any objection by the lessor to have the work continued as long as the lease remains unproductive. Difficulty sometimes arises, however, when the value of the lease is demonstrated. As a suggestion a good way to deal with such a contingency would be to date the lease from the time of the first shipment of ore.

There is considerable variation in the size of the blocks of ground granted to lessees. Old mines worked on the leasing system may be divided into a number of blocks, which are worked by different sets of lessees. The size of the blocks may be 100 feet along the strike of the vein and the height between two levels or the entire block of ground between two successive levels. Sometimes the lessors reserve the right to work blocks of ground immediately above or below any new finds made by the lessees in their explorations.

An entire mine or prospect, including all the surface and underground equipment, may be leased. If the mine or prospect is not equipped with machinery the lessee usually is required to furnish it. A fair medium between this arrangement and one where the lessor furnishes the equipment may be arranged whereby each party furnishes part of the equipment.

BASES OF SETTLEMENT (ROYALTIES)

In the leasing system the royalty represents the division of the profit on the ore produced. It is to the advantage of both parties to the contract to make an equitable adjustment of royalty payments. High royalties put a premium

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on gouging for higher grade ores and decreases the lessees incentive to do exploration work.

There never has been any attempt at standardization of royalty payments, as the problem involves not only variation of the metal content of ores but also variable costs of mining, treatment, and transportation. In consequence, royalties must be adjusted to suit the conditions at each property. In general, three methods are employed in settling royalties in mine leasing. These are flat royalty, split-check, and sliding-scale methods of payment.

With the flat royalty method of payment the royalty to be paid is determined largely on the amount of ore available and the difficulties of exploration or development. Royalties may be 5 to 30 percent of the assay value of the ore or of the net returns from the mill or smelter. The higher royalties usually indicate that high-grade ore exists under favorable conditions for mining, while the lower royalties indicate the reverse. Conditions are so variable in different mines that no general rules can be applied in fixing royalties.

As an illustration of the flat scale method of royalty payments the Goldfield district, Nevada, may be cited. This district owed its rapid expansion in its initial stages of development almost entirely to the leasing system, and with the exception of the Combination mine virtually all of the ore bodies were discovered by lessees. The early leases in the district generally ran for 1 year, and the royalties ranged from 20 to 30 percent of the returns from the smelter. So rich were many of the ore bodies that numbers of successful lessees made fortunes in a few weeks. The original Florence lease produced $750,000; the Bowes and Kernick lease on the Jumbo property, $500,000; the Reilly lease on the Florence No. 2, $550,000; and the Hayes and Monette lease, a gross total of $4,400,000.

The silver-gold deposits of the Tonopah district were also prospected and developed in the early years by leases let on a flat scale basis. To prove the value of the original discovery in this district, Jim Butler, the discoverer, gave a number of leases with a flat royalty of 25 percent based on the smelter returns. These leases ran 1 year, and many were very profitable. Ore valued at $4,000,000 was extracted by lessees before the leases expired. It is interesting to note that all the leases given by Butler were verbal, and even though the property was sold while a number of them were still in effect, the verbal contracts made were observed to the letter.

With the split-check system of leasing the net returns from the mill or smelter are divided equally between the lessee and the lessor. In this arrangement the lessor furnishes the equipment for mining, explosives, and all other supplies necessary, while the lessee furnishes the labor and supervision. By the split-check system the lessees are able to do more prospecting and development work than is possible with other methods of royalty payment since there is closer cooperation between lessee and lessor.

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The split-check system is employed extensively in subleasing where a lessee may take a lease on an entire mine on a flat royalty basis and sublease blocks of ground to smaller operators. The original lessee usually provides all the equipment and supplies, so that the sublessee risks only his time and labor. Many experienced lessees prefer the subleasing arrangement, even though it entails higher royalty, because they prefer to work with machine drills rather than hand steel or other less efficient equipment.

An example of the split check system of royalty payments practiced in the Cripple Creek district is described by Keeler.[2] The Engineers Lease, Inc., organized by a group of engineers, obtained leases in the Vindicator, Cresson, and Portland mines of the Cripple Creek district, on royalty terms whereby the returns from the mill were divided equally between the lessee and the lessor. Supplies and equipment were furnished by the companies, and the Engineers Lease furnished all the labor, management, and engineering skill. The split-check principle was carried farther in the division of the profits accruing to the Engineers Lease: two fifths of the profit is paid to the miners, who in addition were guaranteed a "grubstake" wage of $1.25 per day, two fifths is paid to the men furnishing the capital for paying the miners, and one fifth goes to the organizers of the plan.

In the sliding-scale system of royalty payments the royalties are low on the lower-grade ores and become higher with increasing value of the ore. The justification for fixing a ratio between the value of the ore and the royalty is that the lessee can better bear the higher royalty on the higher-grade ore. Were no sliding scale adopted and all ores, irrespective of grade, charged at an average royalty, that royalty would be so high as to make the production of lower-grade ores unprofitable to the lessee. Hence, a low royalty on low-grade ores stimulates mining this class of ore. An illustration of sliding-scale royalty payments is as follows:

Value of ore per ton.	Royalty payment - percent
Up to $10	10
$10 to $20	15
$20 to $40	20
$40 to $100	25
$100 to $240	30
$240 and over	50

With the sliding-scale system, royalties vary greatly in different mines. The system is particularly applicable where there is considerable variation in the metal content of the ores. As high as 95 percent royalty has been paid by a lessee on exceptionally rich ore, and the lessee was still able to make a profit.

A variation of sliding-scale royalty has been employed whereby the percentage of the gross value of the ore is determined by taking a fractional part of the value of the ore. Thus, if the fraction decided upon is one third and the ore assayed $60 per ton, the royalty would be one third of 60 or 20

2 Keeler, Ralph, Unique Unemployment Relief, Min. Jour., vol. 15, no. 21, 1932, p. 6.

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percent, equivalent to $12 per ton. Obviously, if the ore assayed $300 per ton the royalty would be one third of 300 or 100 percent, the entire value of the ore. To avoid this difficulty provision is made that the royalty does not exceed a fixed percentage of the higher-grade ore.

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